the attainment of some purpose of national or scientific importance," Principal Griffiths advocated the publication of a *Journal of Corresponding Societies,* towards the expenses of which the various societies should contribute according to the respective numbers of their members.

The chairman's views were received with much favour by the delegates and others attending the meeting. Sir Norman Lockyer referred to his presidential address of last year, in which he suggested that the organisation of the corresponding societies might become a potent and valuable machine for influencing public opinion on matters relating to science throughout the country. He regarded the corresponding societies as having before them an important and undeveloped field of work. With regard to the Corresponding Societies Committee, he advocated more frequent meetings and a closer union with the central organisation of the British Association. Mr. W. Whitaker agreed with the chairman that the time was come when it seemed desirable to reconsider, and possibly revise, the old conditions regulating the affiliation of local societies. He considered that the maintenance of a good museum might be as much a ground for union as the publication of a volume of proceedings. The Rev. W. Stallworthy advised the appointment of a small number of competent members as inspectors, who should visit the various local societies and report upon their work to the authorities at headquarters. Prof. Ewing advocated the admission of the smaller societies in outlying districts, where publication was not to be regarded as the test of usefulness. Dr. G. Abbott supported the views of the chairman, and enlarged on the advantage of uniting societies in local groups. Many societies in the south-east of England had been strengthened by such a union. He thought that the British Association should get into touch with as many societies as possible, and that no barrier should be raised, such as that of publication. The Rev. T. R. R. Stebbing deprecated publication being used as a test of the usefulness of a society. If the paper were important, it ought to go to a central society, and not be published locally; if it were unimportant, it were better not published at all.

Ultimately a committee was appointed to consider the present relation between the British Association and the local scientific societies, and to make suggestions to the council with a view to the greater utilisation of this relationship, and the extension of affiliation to societies now excluded.

The subject of museums, which has often been discussed at the annual conference of delegates, was brought forward by the Rev. W. Johnson, of York, who read a paper on the utilisation of local museums, with special reference to schools. He believed that provincial museums have often failed in developing the scientific habit in visitors, because they have given too much prominence to rarities, whereas the beginner needs illustrations of common objects, such as he is likely to find in his own study in the field. A large amount of material now lies buried in our museums needing judicious display and description to render it available to the young student. Mr. Johnson held that every museum should have attached to it a demonstration room, fitted with lanterns and other lecture-room appliances, and he considered that demonstrations by competent persons might well be paid for by the State, in consideration of their value in assisting the higher science teaching in our schools. The excellent work of Mr. Crowther, the curator at Leeds, in giving demonstrations to children from the local schools, was referred to with warm approval. Mr. Johnson recommended that during the winter-holidays museum-lectures should be given on elementary meteorology, explaining the nature and use of the various instruments which are used at most museums for obtaining weather records.

In discussing the paper, Mr. Rudler referred to the difficulties incidental to museum demonstrations, and advocated the delivery of the lecturette in a separate room, followed by adjournment to the museum. The interest of the delegates in the museum question centred in the point of contact between the local museum and the local society, and he referred to some of the ways in which the society might assist the museum, such as the frequent display of fresh specimens of wild flowers with instructive labels. Whilst admitting the importance of taking children to the museum, he held that it was equally desirable to take the museum to the children, and he consequently favoured the practice of circulating educational cabinets of specimens among the local schools.

At the second meeting of the delegates, Mr. J. Hopkinson, of the Hertfordshire Natural History Society, brought forward a very practical subject relating to the publications of scientific bodies. He denounced the insufficiency of the title given in certain papers, and the absence of an index, a table of contents, or a list of plates in the publications of many societies. The date of publication of each part or number of a volume of proceedings should always be given, and in the case of reprints of papers, the original pagination should be preserved, whilst the date and volume of the publication from which they are extracted should invariably be stated. Dr. Tempest Anderson, who presided at the second meeting of the delegates, spoke strongly in favour of securing uniformity in the size of the publications of scientific societies.

In the discussion on the aid which local societies could give to the work of the committees of various sections of the British Association, Dr. H. R. Mill, as a delegate from Section A, pleaded for increased interest in meteorology, and urged the local societies to take regular and systematic observations. Mr. Whitaker, on behalf of Section C, solicited the aid of the societies in seeking the derivation and precise significance of local terms relating to geological and geographical subjects—an appeal which was supported by Dr. Herbertson, representing Section E. The Rev. T. R. R. Stebbing, speaking for Section D, suggested, as additional work for local societies, the study of overland lines of migration of birds, and the collection of slugs from all parts of the British Isles. Miss Sargent solicited information with regard to certain points in the growth of British orchids. The conference was not favoured with suggestions from any of the other sections.

EOCENE WHALES.

A MOST important contribution to our knowledge of the extent and affinities of that group of Eocene marine mammals known as Archæoceti has recently been made by Prof. E. Fraas, of Stuttgart, in an illustrated memoir entitled "Neue Zeuglodonten aus dem unteren Mitteleocän vom Mokattam bei Cairo," published in Koken's *Geologische und Palaeontologische Abhandlungen.* The Archæoceti, or zeuglodonts, which have hitherto been definitely known only by various species of the typical genus Zeuglodon, have been regarded by many zoologists as the direct ancestors of the modern whales and dolphins, and if this view be accepted, it has for some time been evident (although this was not the opinion of the late Sir William Flower) that the toothed whales, at any rate, are probably the descendants of carnivorous mammals, as it seemed impossible that the zeuglodonts could be derived from a herbivorous type.

The carnivorous descent of the zeuglodonts is now fully demonstrated by Prof. Fraas, who describes two new generic representatives of the group—Protocetus and Mesocetus—from the well known Middle Eocene nummulitic rocks of the Mokattam range near Cairo. Of the former genus the author figures a nearly complete skull, together with many of the bones of the skeleton. In both genera the teeth are of the typical mammalian number, and divisible into incisors, canines, premolars, and molars, the latter, in Protocetus at any rate, being quite unlike the corresponding teeth of Zeuglodon, and approximating to those of the primitive Eocene Carnivora of the group Creodontia. The skull, moreover, although much more elongated than in any of the land forms, presents all the distinctive characteristics of the latter group, and there can be little hesitation in accepting Prof. Fraas's view that Protocetus and Mesocetus form connecting links between the terrestrial creodont carnivores on the one hand and the marine zeuglodonts on the other. They are, in fact, terrestrial animals in course of modification into purely aquatic ones. Prof. Fraas does not, however, by any means stop at this, but proceeds to argue that the Archæoceti are entirely unconnected with either the whalebone or the toothed whales, and merely form a marine group of Creodontia which died out without leaving any descendants. As he rightly observes

© 1904 Nature Publishing Group

we have evidence that members of several distinct groups of reptiles—the ichthyosaurs, the plesiosaurs, the marine crocodiles, and the mosasaurs—were independently modified for a marine existence, and there is no reason why a similar state of affairs should not have occurred among mammals.

This is doubtless true; but it has to be borne in mind that, so far as we can see, the new discoveries in no wise affect the alleged relationship of Zeuglodon to the Cetacea, which, if well founded previously, apparently still remains so. Moreover, if we remember rightly, Dr. Elliot Smith, in a recent paper on the brain of the Archæoceti, has pointed out very definite cetacean resemblances, which it would be difficult to explain as due solely to parallelism. Again, if we remove the Archæoceti from the cetacean line, there are no possible ancestors for the whales to which we can point, and, in the present comparatively advanced position of the palæontological record, it would be strange indeed if the past history of the Cetacea (with the exception of forms belonging to the existing groups) were an absolute and complete blank.

While according therefore to Prof. Fraas full credit for having brought the zeuglodonts into phylogenetic relationship with the creodont carnivores, we may be permitted, perhaps, to reserve our judgment as to whether he has succeeded in demonstrating the absence of relationship between the former group and modern whales.

R. L.

FORTHCOMING BOOKS OF SCIENCE.

MR. GEORGE ALLEN directs attention to:—"The Glamour of the Earth," by G. A. B. Dewar, illustrated; "A Volume on Bird Life," by E. Selous, illustrated; and "Recent Discoveries and Excavations in the Forum, 1898 to 1904," by St. Clair Baddeley, illustrated.

Mr. Edward Arnold announces:—"The Becquerel Rays and the Properties of Radio-active Substances," by the Hon. R. J. Strutt; "The Chemical Synthesis of Vital Products and the Inter-relations between Organic Compounds," by Prof. R. Meldola, F.R.S.; "Experimental Researches with the Electric Furnace," by Prof. H. Moissan, translated by Dr. A. T. de Mouilpied; "Physical Chemistry in Biology and Medicine," by Prof. B. Moore; "Astronomical Discovery," by Prof. H. H. Turner, F.R.S.; "The Theory of Optics," by Prof. A. Schuster, F.R.S.; "Preliminary Practical Mathematics," by S. G. Starling and F. C. Clarke; "The Evolution Theory," by Prof. A. Weismann, translated by Prof. J. A. Thomson, two volumes, illustrated; "Nature Study in the House, Garden, and Field," by Prof. L. C. Miall, F.R.S.; "Lectures on Diseases of Children," by Dr. R. Hutchison; "A Manual of Pharmacology for Students," by Dr. W. E. Dixon; "Recent Advances in Chemical Physiology," by Drs. A. P. Beddard, L. Hill, F.R.S., J. J. R. Macleod, B. Moore, and M. S. Pembrey; "Exercises in Arithmetic," oral and written, by C. M. Taylor, part iii.; "The Elements of Trigonometry," by Dr. R. Lachlan and W. C. Fletcher; "A Second Geometry Book," by J. G. Hamilton and F. Kettle; and new editions of "Electrical Traction," by Prof. E. Wilson; and "Human Embryology and Morphology," by Dr. A. Keith, illustrated.

Messrs. Baillière, Tindall and Cox's list includes:—"Manual of Anatomy" (University series), by Dr. A. M. Buchanan; "Malignant Diseases of the Larynx," by P. de Santi; "Psychiatry," by Prof. Bianchi, translated by Dr. J. H. MacDonald; "Appendicitis," by H. W. Allingham; "Guide to the Examination of the Throat, Nose, and Ear," by Dr. W. Lamb; "After-Treatment of Section Cases," by Dr. W. J. S. McKay; "Aids to Pathology," by Dr. W. d'Este Emery; "Aids to Sanitary Law," by Dr. H. G. Critchley; "Coroner's Duties," by R. H. Wellington; "Ship Surgeons' Pocket-book," by W. E. Dawson; "Surface Anatomy," by J. G. Morehead; "Artistic Anatomy of Animals," by Prof. E. Cuyer, translated by G. Haywood; "Diseases of Foot of the Horse," by H. C. Reeks; "Veterinary Ophthalmology," by Captain H. T. Pease; and new editions of "Handbook of Diseases of the Ear," by R. Lake; "Diagnosis and Modern Treatment of Pulmonary Tuberculosis, with Special Reference to the Early Recognition and Permanent Arrest of the Disease," by Dr. A. Latham; "After-treatment of Surgical Operations," by Dr. P. L. Mummery; "Manual of Veterinary Hygiene," by Lieut.-Colonel F. Smith; "The Nutrition of the Infant," by Dr. R. Vincent; "The Röntgen Rays in Medical Work," by Dr. D. Walsh; and "Handbook of Surgical Pathology," by Dr. W. J. Walsham.

The list of Messrs. W. Blackwood and Sons contains:—"Philosophy as Scientia Scientiarum," by Dr. R. Flint; and new editions of "The Ethics of Naturalism, a Criticism," by Prof. W. R. Sorley; and "The Forester, a Practical Treatise on Planting," by Dr. J. Nisbet, two vols., illustrated.

In the list of Messrs. Burns and Oates, Ltd., we notice:—"Stars without Stripes, being a Grand Review of the Planetary System held by his Sovereign the Sun, with a Foreword," by A. M. Clerke.

Messrs. Cassell and Co., Ltd., promise:—"Serums, Vaccines, and Toxines, in Treatment and Diagnosis," by Dr. W. C. Bosanquet; and "The Student's Handbook of Surgical Operations," by Sir F. Treves, Bart., K.C.V.O., abridged from the new edition of "The Manual of Operative Surgery," illustrated.

The following are in preparation at the Clarendon Press:—"The Ancient Races of the Thebaid, being an Anthropometrical Survey of the Inhabitants of Upper Egypt from the Earliest Prehistoric Times to the Mohammedan Conquest of Egypt," by Dr. A. Thomson and D. Randall-MacIver; Suess's "Das Antlitz der Erde," authorised English translation, by Dr. H. Sollas, edited by Prof. W. J. Sollas, F.R.S., with preface written by Prof. Suess for the English translation; "Index Kewensis Plantarum Phanerogamarum. Supplementum secundum, nomina et synonyma omnium generum et specierum ab initio anni 1896 ad finem anni 1900 complectens"; Goebel's "Organography of Plants," authorised English translation, by Prof. I. Bayley Balfour, F.R.S., vol. ii., "Special Organography"; "A Geometrical Political Economy: being an Elementary Treatise on the Method of Explaining some of the Theories of Pure Economic Science, by means of Diagrams," by H. Cunynghame, C.B.; "India," by Sir T. Holdich, K.C.I.E.; and "The Farther East," by A. Little.

Messrs. T. and T. Clark announce:—A new series, "The Library of Ancient Inscriptions," in which will appear "Babylonian and Assyrian Laws, Contracts, and Letters," by the Rev. C. H. W. Johns; "History of the Discovery and Decipherment of the Ancient Inscriptions," by Prof. C. F. Kent and Dr. G. A. Reisner; "Babylonian and Assyrian Epics, Penitential Psalms, Proverbs, and Religious Texts," by Prof. F. Delitzsch; "Egyptian Religious, Magical, Medical, and Scientific Texts, Legal and Business Documents," by F. L. Griffith; "Assyrian Historical Inscriptions," by Prof. M. Jastrow; "Inscriptions of Palestine, Syria, and Arabia," by Prof. C. C. Torrey; "Egyptian Tales, Proverbs, Poems, and Belles-Lettres," by Prof. Maspero; "Egyptian Historical and Biographical Inscriptions," by Prof. W. Max Müller. They also promise "By Nile and Euphrates: a Record of Discovery and Adventure," by H. V. Geere.

Mr. W. B. Clive's list contains:—"A Higher Text-book of Magnetism and Electricity," by Dr. R. W. Stewart; "Technical Electricity," by Prof. Davidge and R. W. Hutchinson; "Preliminary Geometry (part i., the Junior Geometry), for the Preliminary Cambridge Local," by W. P. Workman; "Tutorial Geometry," by W. P. Workman; "School Magnetism and Electricity," a school course by Dr. R. H. Jude; "Properties of Matter"; "Practical Physics"; "First Stage Theoretical Organic Chemistry," by R. A. Lyster; "First Stage Physiology"; "First Stage Human Physiology"; "First Stage Applied Mechanics"; "Deakin's Algebra," scholarship edition; "Scholarship Geometry"; "Scholarship Graphs"; "Scholarship Elementary Science," section i.; "Scholarship Elementary Chemistry"; "Scholarship Elementary Astronomy"; "Scholarship Elementary Biology"; "Deakin's Algebra," certificate edition, by Rupert Deakin; "Deakin's Euclid," certificate edition, Books i., ii., iii., iv. (1–10), vi. (1–4), by R. Deakin; "Graphs," the graphic representation of algebraic functions; General Elementary Science, part i., "Physiography," part ii., "Biology"; part i. "School and Home Hygiene," by R. A. Lyster; and new editions

© 1904 Nature Publishing Group